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Session nº 1 — New cardiovascular techniques

01

Diagnostic value of cardiac magnetic resonance in patients presenting with chest pain, troponin elevation and unobstructed coronary arteries

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Objectives.— Among patients presenting with chest pain, troponin elevation and non obstructed coronary arteries, diagnosis is important for prognostic stratification and treatment. However, many conditions can lead to this presentation. We sought to assess the diagnostic value of cardiac magnetic resonance (CMR) in this setting.
Patients and methods.— From January 2009 to December 2012, 108 consecutive patients with chest pain, troponin elevation and unobstructed coronary arteries on coronary angiography underwent a CMR study with cine imaging, T2 weighted imaging for detection of inflammation and late gadolinium enhancement imaging for detection of infarction/fibrosis.
Results.— Mean age was 54 ± 17 years and 54 (50%) were men. Mean peak troponin I level was 5.49 ± 7.3 ng/mL (range: 0.1—40). The median interval from presentation of chest pain to CMR was 5 days. CMR lead to a formal diagnosis in 76 (70.3%) patients. The final diagnosis was acute myocarditis in 32 (29.6%) patients, acute myocardial infarction in 24 (22.2%) patients, stress cardiomyopathy in 16 (14.8%) patients, hypertrophic cardiomyopathy in two cases (1.8%) and cardiac amyloidosis in two cases (1.8%). In 25 (23.1%) patients, the CMR was normal. Patients with normal CMR had a lower mean peak level of troponin (1.75 ng/mL) than patients who have abnormal examination (6.69 ng/mL) ($P = 0.001$).
Conclusion.— Among patients admitted with chest pain, troponin elevation and non obstructed coronary arteries, CMR establishes a definite diagnosis in more than 2/3 of patients and is useful to discriminate patients who need secondary prevention treatment. Normal CMR seems to be correlated with a smaller myocardial injury.

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02

Interest of 3D TEE for the percutaneous closure of paraprosthetic mitral valves leaks

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Prosthetic valve leaks are rare, mainly mitral, and difficult to treat due to possible refractory heart failure and anemia. In case a new surgical operation is too risky, percutaneaous closure has been proposed.
The main difficulty of this procedure is the passage of the guide wire through the regurgitant orifice. 2D angiography alone cannot locate and guide the procedure with enough precision. A 3D anatomical imaging obtained real time using 3D TEE minimizes this difficulty. We have also observed that the anatomy of the regurgitation zone, as well as its location, can be very different from one patient to another.
We report 11 consecutive closures of mitral paravalvular leaks between 2009 and 2012, in seven patients (four men, range 1 to 4 procedures per patient). Mean age was 71 y. and 5/7 patients (71%) had mechanical prosthesis.
The procedural closure success rate was 64% (7/11) with a mitral regurgitation regression of at least one grade. The clinical impact was rapidly evident with a reduction of the NHYA grade (from 1 to 2) and reduction in the need of transfusion. There was no per procedure mortality.
Our experience highlights the role of 3D TEE for the location of the leak, its shape length and width in pre procedure. During the procedure it is more helpful than fluoroscopy for positioning the device. According to this experience, percutaneous closure guided by 3D TEE can be a real alternative to surgery in symptomatic patients with high surgical risk.